

LISTING OF THE CLAIMS:

Without prejudice, this listing of the claims replaces all prior versions and listings of the claims in the present application:

LISTING OF THE CLAIMS:

1-31. (Canceled).

32. (Previously Presented) A braking system for vehicles, comprising:

at least one first brake circuit; and

at least one second brake circuit, wherein the at least one first brake circuit and the at least one second brake circuit each have an electrical control circuit, which respectively has an electronic control unit and its own power supply device, and brake actuating devices which are activatable by the electronic control units, at least one of the brake actuating devices being activatable by more than one of the electronic control units;

wherein the brake circuits are electrically activatable via a foot brake valve, and the foot brake valve has two electrical braking transmitter devices which are each connected to the electronic control units so that they are DC-isolated.

33. (Previously Presented) The braking system of claim 32, wherein the electrical control circuits are DC-isolated from one another.

34. (Previously Presented) The braking system of claim 32, wherein the electronic control unit of the first brake circuit is connected to the electronic control unit of the second brake circuit via a communications line, the communications line having a device for DC-isolating the two control circuits.

35. (Previously Presented) The braking system of claim 32, wherein the two control circuits have a common ground connection.

36. (Previously Presented) The braking system of claim 32, wherein the electronic control units are connected to other electrical or electronic vehicle systems so that they are DC-isolated.

37. (Canceled).

38. (Previously Presented) The braking system of claim 32, wherein the two power supply devices are batteries, a second battery being connected to a first battery via a DC-isolation device and being chargeable via the first battery.

39. (Previously Presented) A braking system for vehicles, comprising:

at least one first brake circuit; and

at least one second brake circuit, wherein the at least one first brake circuit and the at least one second brake circuit each have an electrical control circuit, which respectively has an electronic control unit and its own power supply device, and brake actuating devices which are activatable by the electronic control units, at least one of the brake actuating devices being activatable by more than one of the electronic control units;

wherein the brake circuits are electrically activatable via a foot brake valve, and the foot brake valve has two electrical braking transmitter devices which are each connected to the electronic control units so that they are DC-isolated,

wherein the two power supply devices are batteries, a second battery being connected to a first battery via a DC-isolation device and being chargeable via the first battery, and

wherein the DC-isolation device has an electronic monitoring unit to monitor states of charge of the batteries, the electronic monitoring unit being switchable to a charge reversal state in which the first battery is charged by the second battery, and wherein the electronic monitoring unit uses a generator to control the charging of at least one of the first battery and the second battery.

40. (Previously Presented) The braking system of claim 39, wherein the electronic monitoring unit is connectable to other electrical or electronic vehicle systems, so that it is DC-isolated, in order to transmit a state of charge of the batteries.

41. (Previously Presented) The braking system of claim 32, wherein the brake actuating devices are electropneumatic pressure regulation modules, and wherein there are at least two

separate pneumatic supply circuits for supplying the pressure regulation modules with brake pressure.

42. (Previously Presented) The braking system of claim 41, wherein the supply circuits are each assigned to a vehicle axle or a group of axles.

43. (Previously Presented) The braking system of claim 41, wherein a brake circuit is respectively assigned precisely one control circuit and precisely one supply circuit.

44. (Previously Presented) The braking system of claim 32, wherein the first brake circuit is assigned to the brakes on the front axle and the second brake circuit is assigned to the brakes on the rear axle.

45. (Previously Presented) A braking system for vehicles, comprising:

at least one first brake circuit; and

at least one second brake circuit, wherein the at least one first brake circuit and the at least one second brake circuit each have an electrical control circuit, which respectively has an electronic control unit and its own power supply device, and brake actuating devices which are activatable by the electronic control units, at least one of the brake actuating devices being activatable by more than one of the electronic control units;

wherein the brake circuits are electrically activatable via a foot brake valve, and the foot brake valve has two electrical braking transmitter devices which are each connected to the electronic control units so that they are DC-isolated,

wherein the brake actuating devices are electropneumatic pressure regulation modules, and wherein there are at least two separate pneumatic supply circuits for supplying the pressure regulation modules with brake pressure, and

wherein the first brake circuit is a service brake circuit and the second brake circuit is an emergency brake circuit which assumes the function of the first brake circuit in regular rotation under the control of the electronic control units, the non-active brake circuit respectively being checked, and the pressure regulation modules each being connected to the service brake circuit and to the emergency brake circuit via a high-pressure selection valve,

the high-pressure selection valve transmitting the higher of the brake pressures, which are provided by the two brake circuits, to the associated pressure regulation module.

46. (Previously Presented) The braking system of claim 45, wherein a pressure regulation module of the service brake circuit and a pressure regulation module of the emergency brake circuit are respectively connected upstream of each of the high-pressure selection valves.

47. (Previously Presented) The braking system of claim 45, wherein the first supply circuit is formed by two subsupply circuits which are each connected to their own associated pressure-medium store, the first subsupply circuit being assigned to a first group of pressure regulation modules of the first brake circuit and the second subsupply circuit being assigned to a second group of pressure regulation modules of the first brake circuit.

48. (Previously Presented) The braking system of claim 47, wherein the two subsupply circuits are each assigned to an axle or group of axles.

49. (Previously Presented) The braking system of claim 45, wherein the second brake circuit has its own pressure-medium store, and wherein the brake pressure from the second brake circuit is applicable to all of the high-pressure selection valves via associated pressure regulation modules of the second brake circuit.

50. (Previously Presented) The braking system of claim 49, wherein a parking valve and a trailer control valve are connected to the pressure-medium store of the second brake circuit.

51. (Previously Presented) The braking system of claim 45, wherein a respective wheel speed sensor is connected to each pressure regulation module, each wheel respectively being assigned two wheel speed sensors.

52. (Previously Presented) The braking system of claim 50, wherein the parking valve is electrically connected to each of the two electronic control units.

53. (Previously Presented) The braking system of claim 50, wherein the trailer control valve is activatable by the two electronic control units, and wherein a logic device is included to switch through only that control signal which results in the trailer vehicle being decelerated to a greater extent.

54. (Previously Presented) The braking system of claim 32, wherein, under the control of the electronic control units, the second brake circuit assumes the function of the first brake circuit if the latter fails and the first brake circuit assumes the function of the second brake circuit if the latter fails.

55. (Previously Presented) A braking system for vehicles, comprising:

at least one first brake circuit; and

at least one second brake circuit, wherein the at least one first brake circuit and the at least one second brake circuit each have an electrical control circuit, which respectively has an electronic control unit and its own power supply device, and brake actuating devices which are activatable by the electronic control units, at least one of the brake actuating devices being activatable by more than one of the electronic control units;

wherein the brake circuits are electrically activatable via a foot brake valve, and the foot brake valve has two electrical braking transmitter devices which are each connected to the electronic control units so that they are DC-isolated, and

wherein, if at least one pneumatic circuits fails, a pressure distribution device for charging and isolating the pneumatic circuits still allows the normal supply pressure in the fault-free circuits, and an electronic communications system is connected.

56. (Previously Presented) The braking system of claim 32, wherein the electronic control units of brake circuits are connected to one another via communications lines, the communications lines having devices for the DC-isolation of the control circuits.

57. (Previously Presented) The braking system of claim 32, wherein the power supply devices of the control circuits are batteries, the batteries being connected to one another and being able to be charged via DC-isolation devices.

58. (Previously Presented) The braking system of claim 50, wherein the parking brake valve has electropneumatic function valves, locking valves and pressure sensors.

59. (Previously Presented) The braking system of claim 58, wherein the locking valves block the control systems with respect to one another as regards actuation of the parking brake valve.

60. (Previously Presented) The braking system of claim 32, wherein the DC-isolation devices are transducers having their own electronic control devices.

61. (Previously Presented) The braking system of claim 60, wherein the transducers have converters in both directions.

62. (Previously Presented) The braking system of claim 60, wherein the transducers each have communications interfaces.